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Patrick Andrus

Industrial Designer and Engineer

Skills

Design and Engineering

Ethnographic and Qualitative Research
Team Brainstorming
Concept Sketching and Rendering
Design for Manufacturing and Assembly
Product and Prototype Testing

Tools

SolidWorks
ZBrush
Creo/Proe
KeyShot
Abaqus FEA
SketchBook
Adobe Photoshop
Adobe Illustrator
Adobe Character Animator

Fabrication and Prototyping

Paper and Foam Board Modeling
Foam and Clay Sculpting
3D Printing
Laser and Waterjet Cutting
Horizontal Lathe and Vertical Mill
MIG and TIG Welding
Sheet Metal Fabrication
Arduino Board Coding

Sponsored Projects

Future Garbage Trucks

Republic Services | 08/19. - 12/19

- Developed a concept vehicle and business impact presentation.

User Research - IOT Pet Products

PetSmart | 05/19

- Analyzed pet parent's current and future needs pertaining to Internet of Things (IOT) pet products,



Experience

Industrial Design Engineer II

Metaphase Design Group | St. Louis, MO | 10/21 - Present

- Develop and present new product concepts and research results to internal team members, clients, and manufactures through physical models, 2D sketches, and 3D models that meet user needs, ergonomics, and manufacturing constraints.
- Lead and support user studies for medical and consumer products to develop user incites and validate product designs .
- Impliment DFMA for product concepts on projects.
- Simultaneously perform the role of project manager on multiple projects and help develop project timelines and statements of work to meet client needs.

Mechanical Engineer II

SLOAN | Mesa, AZ | 11/20 - 10/21

- Customize standard product designs to user needs and requirements.
- Contributed to NPD efforts by leading projects and collaborating with other engineers.
- Supervised one intern to perform daily tasks and complete product customizations.

Playground Industrial Design Intern

Boys & Girls Club of Round Valley | Eagar, AZ | 05/19 - 07/19

- Conducted user research focusing on the play of 5-10 year old children.
- Developed concepts through scale models, 2D sketches and 3D models.
- Lead concept reviews with client and other key stake holders.
- Performed engineering analysis on final design.

Mechanical Design Engineer (R&D)

Katalyst Surgical | Chesterfield, MO | 11/15 - 04/17

- Was responsible for NPD of surgical equipment in multiple areas including the chassis, pneumatics, single-use tubing, and electronics.
- Coordinated with manufacturers to produce designs to meet cost and technical needs.
- Optimized specific manufacturing processes to increase the output by 50%.
- Conducted prototype testing in surgical rooms and internal labs to meet PRD requirements.

Design Engineer (Contractor)

DRS Technologies through Aerotek, Inc. | St. Louis, MO | 07/14 - 06/15

- Updated 3D models and 2D schematics on both domestic and military heavy vehicles.
- Developed welding fixture designs to robotically manufacture vehicle chassis.
- Lead efforts to introduced a new project life cycle management database.

Education

Master of Industrial Design

Arizona State University 2020

Masters of Science, Engineering, Aerospace and Mechanical Engineering

Saint Louis University 2014

Bachelor of Science, Mechanical Engineering and Minor in Music

Saint Louis University 2012